EPA OFFICE OF LAND AND EMERGENCY MANAGEMENT (OLEM) PROCEDURES FOR UNMANNED AIRCRAFT SYSTEMS (UAS)

PURPOSE

As required by EPA's UAS Policy dated December 5, 2020, the purpose of this document is to establish the categories and conditions under which the use of UAS will and will not be allowed under OLEM's program areas. This document applies only to the following OLEM appropriations which are authorized to fund UAS operations: Superfund (e.g., removal and remedial), Oil Pollution Act (OPA), Stafford Act, and Environmental Programs and Management (EPM) funding. Until Congressional authorization is provided, EPA cannot use Superfund Special Account funds, Leaking Underground Storage Tank (LUST), or State and Tribal Assistance Grant (STAG) funds to pay for UAS (either directly or through contractor support).

EPA grantees are not restricted by 31 U.S.C. 1343(d) from using grant funds from any appropriation account, including Superfund Special Accounts, for UAS-related costs so long as doing so would be within the scope of the grant and otherwise allowable under the grant regulations. Therefore, EPA grant and cooperative agreement recipients may use EPA awarded funds for UAS-related costs where the costs are reasonable and necessary for the performance of the federal award. However, programs must not direct, encourage or suggest that financial assistance recipients transfer title or possession of UAS to EPA.

SCOPE

The intent of this document is to provide usage procedures ensuring that EPA-procured UAS operations conducted by OLEM or Regional personnel and contractors are in compliance with the EPA UAS policy. This applies to OLEM and regional personnel operating within the Superfund (e.g., Emergency Response/Removal, Remedial, and Federal Facilities programs), RCRA, Oil, State and Local Prevention, and Brownfields Programs.

BACKGROUND

The 2015 Presidential Memorandum: *Promoting Economic Competitiveness While Safeguarding Privacy, Civil Rights, and Civil Liberties in Domestic Use of Unmanned Aircraft Systems,* states that Federal Agencies are required to develop policies for UAS that consider account privacy, civil rights and civil liberties protections, accountability, and transparency. In addition, one of the primary drivers for this policy is the safety of EPA staff, contractors, and grantees tasked with capturing data in hazardous circumstances.

Under the EPA UAS Policy each EPA program is required to develop procedures and training for the use of UAS that will allow EPA to meet its mission goals with additional data collection capabilities while increasing safety, enhancing situational awareness, reducing costs and increasing efficiency. For example, safety may be increased by allowing EPA staff to monitor hazardous conditions from a safe distance and identify hazards before entering a hazardous zone. Use of UAS will also enable the Agency to collect critical data for a fraction of the cost of

traditional airplanes or human-centered data collection methods, particularly in remote areas, areas with steep or rugged topography, or areas which are otherwise inaccessible.

RELEVANT UAS POLICIES AND PROCEDURES

- EPA UAS Policy
- Roles and Responsibilities of the EPA Special Government Interest Requestor for Emergency Use of UAS

WORK CATEGORY MATRIX

OLEM has identified work categories listed below as UAS operations which may be approved by a Regional Division Director. For example, the Regional Superfund and Emergency Management Division (SEMD) Director may delegate this approval authority by category or program office. ***UAS operations not listed in this procedure then must be approved by the OLEM Assistant Administrator prior to flight.***

All EPA UAS operations[1] will be determined on a mission basis. The Agency will either operate as a Public Aircraft Operation (PAO) under a Certificate of Authorization (COA), or as civil operator under the Federal Aviation Administration (FAA) Small UAS rules in 14 CFR Part 107. The Pilot-In-Command (PIC) will either be obtained through SEMD subcontracted services or through a federal Interagency Agreement (IA). When EPA is responding to natural disasters or other emergency situations, the Agency may be eligible for expedited approval to operate in classified airspace through the FAA's Special Governmental Interest (SGI) process. Operations that may be considered under SGI include: Firefighting, Search and Rescue; Law Enforcement; Utility or Other Critical Infrastructure Restoration; Incident Awareness and Analysis; Damage Assessments Supporting Disaster Recovery Related Insurance Claims; and, Media Coverage Providing Crucial Information to the Public.

Each of the Regional SEMD Directors will designate two individuals to serve as an EPA SGI Requestor; duties of the SGI Requestor are described in the *Roles and Responsibilities of the EPA Special Government Interest Requestor for Emergency Use of Unmanned Aircraft Systems*. The SEMD Director should document this designation in a memo that can be provided to the FAA Systems Operations Support Center (SOSC) upon request. To apply for a waiver through the SGI process the Agency must be using a PIC with an existing Part 107 Remote Pilot certificate OR an existing Certificate of Waiver or Authorization (COA). To request a waiver the SGI requestor will contact the FAA's SOSC and provide them with the Emergency Operation Request Form. If approved, the FAA will add an amendment to the existing COA or Remote Pilot Certificate that authorizes flights under certain conditions for the specified operation. If denied, operators should NOT fly outside the provisions of their existing COA or part 107.

CATEGORY	DEFINITION	REQUIREMENTS

[1] UAS operations led by states, other Federal agencies designated under EO 12580 as the lead agency, tribes and non-federal PRPs where EPA has an oversight role generally would not be defined as an 'EPA UAS Operation' thus many requirements in this memo would not apply. Regional questions regarding applicability in those instances should be referred to the appropriate OLEM program office.

Interior	Operated completely within the interior of a structure or physical feature (ex. a mine tunnel)	FAA rules for small UAS do not apply to interior spaces; however, UAS should not operate within interior spaces occupied by either the public or any other person not affiliated with site or response operations. As a Best Management Practice (BMP), the UAS operator should still meet requirements listed in the Standard Site Operations Work Category.
Standard Site Operations	Flights lower than 400 feet above ground level (AGL) and in Class G airspace, not requiring a waiver, to collect data at properties where EPA has obtained legal access to conduct site-related activities. Anticipated UAS sensor data collection may include, but is not limited to, visual, multispectral, hyperspectral, LIDAR[2], and/or thermal data. UAS may also be used to collect multi-media samples.	Contracted Pilot-In-Command must possess a valid remote pilot certificate and meet the requirements of 14 CFR §107.65 to operate UAS at the site. Only aircraft with a valid registration certificate pursuant to the requirements of 14 CFR §91.203(a)(2) or a current Section 44807 exemption, and which is registered to the contractor will be allowed to operate at the site. The contractor must provide documentation of their certifications and must operate strictly within the requirements of 14 CFR Part 107 Subpart B. A federal agency operating on EPA's behalf under an interagency agreement may meet the requirements for contracted UAS services or must provide a valid FAA 7711-1 UAS Certificate of Authorization (COA) which permits the type and location of the requested work.
High Elevation Flights	Flights above 400 feet AGL and in Class G airspace, to collect data at properties where EPA has obtained legal access to conduct site-related activities. An example need for this altitude is the capture of an entire site footprint within a single data frame.	The UAS operator must meet requirements listed in the Standard Site Operations Work Category. The UAS operator must obtain a Operational Waiver for 14 CFR § 107.51(b) to conduct high altitude operations and present the approved waiver to the On-Scene Coordinator (OSC) or Remedial Program Manager (RPM).
Beyond Visual Line-of-Sight Flights	Flights Beyond the pilot's Visual Line-Of-Sight (BVLOS) and in Class G airspace, to collect data at properties where EPA has obtained legal access to conduct site-related	The UAS operator must meet requirements listed in the Standard Site Operations Work Category. The UAS operator must obtain a Operational Waiver for 14 CFR § 107 to conduct the BVLOS flight and present the approved waiver to the OSC or RPM. The UAS operator must ensure that their vehicle is capable of self-egressing from the flight

[2] LIDAR is a three-dimensional laser scanning technology, the name is a blend of "light" and "radar" but is also referred to as an acronym for either "Light Detection And Ranging" or "Laser Imaging, Detection, And Ranging"

	activities. This type of flight may be necessary to obtain data from areas of the site that are remote or otherwise obstructed.	zone and is equipped with obstacle detection and avoidance sensors. BVLOS flights should not be conducted over persons not directly participating in the operation.
Emergency Operations	The OSC has determined that site conditions constitute an emergency requiring immediate UAS flight authorization. Flights will be conducted to collect data at properties where EPA has obtained legal access to conduct site-related activities and/or where the OSC has authority for access in the conduct of an emergency response action under the NCP[3] pursuant to CERCLA as amended by SARA and the CWA as amended by OPA.	For flights lower than 400 feet AGL and in Class G airspace, not requiring a waiver or authorization, the UAS operator need only meet the requirements listed in the Standard Site Operations Work Category. For any flights requiring a waiver or authorization, an expedited approval must be obtained through the SGI process with FAA's SOSC prior to the flight. The EPA SGI Representative making the request will provide the approved waiver to the OSC.
Controlled or Restricted Airspace	Site is located within proximity to a controlled or restricted airspace that requires an airspace authorization for UAS operations. An example of flights that would be conducted in a controlled or restricted airspace is a site located in, or near, an airport or helicopter pad.	The UAS operator must meet requirements listed in the Standard Site Operations Work Category. The UAS operator will be tasked by EPA with requesting controlled Airspace Authorization from the FAA and present documentation of the approved authorization to the OSC or RPM.

OLEM is required to review these work categories annually and issue any additions, corrections or retractions based on that review.

PRIVACY CONSIDERATIONS

The use of the UAS potentially involves privacy considerations. Absent a warrant or exigent circumstances, UAS projects shall adhere to FAA altitude regulations and shall not intentionally record or transmit images of any location where a person would have a reasonable expectation of

[3] National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300)

privacy (e.g., residence, yard, enclosure). Operators and observers shall take reasonable precautions to avoid inadvertently recording or transmitting images of areas where there is a reasonable expectation of privacy. Reasonable precautions can include, for example, deactivating or turning imaging devices away from such areas or persons. Additionally, unintended imaging overlap into private lands should be trimmed from final image products prior to public release, printing, or use in reports.

PERSONALLY IDENTIFIABLE INFORMATION (PII)

Any UAS-collected data product related to a residential property on which EPA has obtained legal authorization to conduct work that includes PII elements such as property address, owner name etc. shall follow the procedures outlined in the "Environmental Assessment of Residential Properties" system of Record[4] notice.

UAS-collected information that includes PII that is not maintained in a system of records covered by the Privacy Act shall not be disseminated outside of the agency unless dissemination is required by law or fulfills an authorized purpose and complies with agency requirements.

PROCUREMENT OF UAS SERVICES

There are two main options for site managers to procure UAS services for their site:

Contract: EPA may use funds specifically appropriated for the "maintenance" or "operation" of aircraft or UAS for contracts or task orders that include explicit terms and conditions regarding the maintenance and operation of UAS as applicable. The contractor may own, lease, rent, maintain, and operate a UAS as necessary to provide the requested work. However, as a legal matter, the contract may not contain terms that transfer ownership of the UAS to EPA at any time. And, as a policy matter, the contract may not lease the UAS to EPA or allow EPA staff to directly operate the UAS.

Interagency Agreement (IA): EPA may use funds specifically appropriated for the "maintenance" or "operation" of aircraft or UAS to pay another federal agency to maintain and operate a UAS on EPA's behalf, whether or not the other agency has an independent interest in the flight. The other agency may own, lease, rent, maintain, and operate a UAS as necessary to provide the requested work. However, as a legal matter, the IA may not contain terms that transfer ownership of the UAS to EPA. And, as a policy matter, the IA may not lease the UAS to EPA or allow EPA staff to directly operate the UAS. A federal agency PIC and aircraft operating on EPA's behalf under an interagency agreement may meet the requirements for contracted UAS services. The other Federal agency must provide a valid FAA Form 7711-1 UAS Certificate of Authorization (COA) which permits the type and location of the requested work.

[4] https://www.govinfo.gov/content/pkg/FR-2016-04-21/html/2016-09290.htm

The following is example language that can be used when procuring UAS services through the two previous methods:

> "Contracted Pilot-In-Command will provide documentation of a valid remote pilot certificate and meet the requirements of 14 CFR §107.65 to operate UAS at the Site. Only aircraft with a valid registration certificate pursuant to the requirements of 14 CFR §91.203(a)(2) or a current Section 44807 exemption (formerly known as the Section 333 exemption), and which is registered to the contractor, will be allowed to operate at the Site."

All UAS operations directed by EPA on-site must be conducted in an official capacity. EPA cannot accept volunteer or in-kind services from recreational operators under any circumstances.

DATA MANAGEMENT

EPA shall only collect information using UAS, or use UAS-collected information, to the extent that such collection or use is consistent with and relevant to an authorized purpose. Any UAS-collected information shall be stored, analyzed and disseminated in a manner consistent with applicable EPA and Regional data management policies. Data shall be stored in EPA systems that have current authorizations to operate from the EPA Chief Information Officer (CIO).

Site-specific Data Management Plans (SSDMP), Quality Assurance Project Plans (QAPP) and other plans for a site where UAS is utilized should be updated to address data collection and management relating to the UAS.

Any UAS collected data submitted to EPA from outside agencies or stakeholders will be evaluated for its known and documented quality and if the data is appropriate for EPA's decision. The data will only be utilized for the specific decision purpose documented by EPA.

COORDINATION WITH PUBLIC AFFAIRS and OLEM

The OSC or RPM should notify the Regional Public Affairs Director (PAD) and the Community Involvement Coordinator (CIC) when UAS has been approved for use at the Site. Regional management shall, except in exigent circumstances, provide written notifications at least 3 working days in advance of any use of UAS to OLEM and the Office of Public Affairs. If there is a need to share UAS data products with the public, the OSC or RPM shall coordinate with their Regional PAD prior to release. All public video products should be posted through services sanctioned and managed by the Office of Public Affairs. See PII section for other restrictions on dissemination.

TRAINING REQUIREMENT

In order to oversee UAS operations on-site, an OSC or RPM must complete the OLEM UAS training curriculum once every two years, and document the completion with their supervisor.

Designated EPA SGI Requestors must complete the OLEM UAS supplemental SGI training curriculum annually and document the completion with their supervisor.

SITE SAFETY

For any site or response where the EPA procures UAS services, the site-specific Health and Safety Plan (HASP) will include safety procedures for UAS operations. The plan must address safety procedures and/or requirements for all personnel at the site, including those not associated with the operation of aircraft.

UAS UTILIZATION REPORTING

Any EPA procured use of UAS aircraft on a site or project must be annually reported to the EPA CIO. Information supplied to the CIO should include a summary of all UAS operations during the previous fiscal year as related to the NPM's Established Categories and Conditions of UAS Uses. Reporting must include:

- The types or categories of missions flown,
- Summary of sensors deployed,
- Types of information acquired,
- Whether information was retained and/or disseminated and to whom disseminated,
- Summary of assistance provided to other government agencies (federal, state, local, or tribal) and under what authority such assistance was provided.

After each EPA UAS mission[5] is completed, the site manager will follow the OLEM UAS Utilization reporting procedure available on the reference site. Reporting will include submitting a copy of the signed approval memorandum (see Appendix A)

PARTICIPATION IN THE UAS COMMUNITY OF PRACTICE

In order to comply with EPA UAS policy, the office directors of the Office of Emergency Management (OEM) and the Office of Superfund Remediation and Technology Innovation (OSRTI) will designate a staff member to be the primary representatives representing OLEM on the EPA UAS Community of Practice. This shall be documented as a memo from the office director to the employee's supervisor.

[5] A "mission" will be defined as the collection of data in pursuit of a specific objective. One mission may include multiple flights of an aircraft and utilize multiple sensors or apparatuses, but is generally limited to a single mobilization and demobilization. Example 1: a two-day survey involving flights of high resolution and multispectral sensors over a large site will be considered a single mission. Example 2: aerial imagery site-progress surveys captured 2 months apart will be considered separate missions.

APPENDICES

- Appendix A. UAS Approval Memo Form

APPROVAL MEMORANDUM

SUBJECT: Notification and Approval for use of Unmanned Aircraft Systems (UAS) at [Site Name] in [Site Location (city, county, state)]

FROM: [OSC/RPM Name], On-Scene Coordinator/Remedial Project Manager

THRU: [Direct-line Supervisor, i.e. Section Chief]

TO: [Division Director], Director, SEMD

PURPOSE

The purpose of this memorandum is to provide notification and document your approval for the use of Unmanned Aircraft Systems (UAS) at the [Site Name] (the Site) in [Site Location (city, county, state)]. The use of UAS at the Site will be conducted in accordance with the EPA UAS Policy (Directive No. XXXX) and the EPA Office of Land and Emergency Management (OLEM) UAS Procedures ([insert version number and date]). The use of UAS will enhance the health and safety of response personnel at the Site by reducing time, risk, and potential chemical and physical exposures that are part of manned or manual data collection methods.

SCOPE OF WORK

Unmanned Aircraft Systems at the Site will be used for collecting data within [describe area(s) where data will be collected]. Sensors on the aircraft will include: [list sensors planned]. Additional sensors may be deployed, as needed. Collected data will be used to evaluate [state how the data will be evaluated and/or whether a determination or decision will be made]. Multiple flights may occur throughout the course of the [response or removal action] to track and document progress of these data. UAS activities will be incorporated into all relevant systematic planning documents for the project.

UAS WORK CATEGORY[6]

The list below includes UAS work categories, as described in the OLEM UAS Procedures, that have been selected for utilization at the Site. [Delete unwanted work categories from list, also delete these directions]

- **Interior**
  - **Definition:** Operated completely within the interior of a structure or physical feature (ex. a mine tunnel)
  - **Requirements:** FAA rules for small UAS do not apply to interior spaces; however, UAS should not operate within interior spaces occupied by either the public or any other person not affiliated with site or response operations. As a Best Management Practice (BMP), the UAS operator should still meet requirements listed in the Standard Site Operations Work Category.

[6] Approval for each of the UAS work categories is delegated to the Regional Superfund Emergency Management Division Director or delegation designee.

- **Standard Site Operations**
    - **Definition:** Flights lower than 400 feet above ground level (AGL) and in Class G airspace, not requiring a waiver, to collect data at properties where EPA has obtained legal access to conduct site-related activities. Anticipated UAS sensor data collection may include, but is not limited to, visual, multispectral, hyperspectral, LIDAR, and/or thermal data. UAS may also be used to collect multi-media samples.
    - **Requirements:** Contracted Pilot-In-Command must possess a valid remote pilot certificate and meet the requirements of 14 CFR §107.65 to operate UAS at the site. Only aircraft with a valid registration certificate pursuant to the requirements of 14 CFR §91.203(a)(2) or a current Section 44807 exemption, and which is registered to the contractor will be allowed to operate at the site. The contractor must provide documentation of their certifications and must operate strictly within the requirements of 14 CFR Part 107 Subpart B. A federal agency operating on EPA's behalf under an interagency agreement may meet the requirements for contracted UAS services or must provide a valid FAA 7711-1 UAS Certificate of Authorization (COA) which permits the type and location of the requested work.

- **High Elevation**
    - **Definition:** Flights above 400 feet AGL and in Class G airspace, to collect data at properties where EPA has obtained legal access to conduct site-related activities. An example need for this altitude is the capture of an entire site footprint within a single data frame.
    - **Requirements:** The UAS operator must meet requirements listed in the Standard Site Operations Work Category. The UAS operator must obtain a Operational Waiver for 14 CFR § 107.51(b) to conduct high altitude operations and present the approved waiver to the OSC or RPM.

- **Beyond Visual Line-of-Sight**
    - **Definition:** Flights Beyond the pilot's Visual Line-Of-Sight (BVLOS) and in Class G airspace, to collect data at properties where EPA has obtained legal access to conduct site-related activities. This type of flight may be necessary to obtain data from areas of the site that are remote or otherwise obstructed.
    - **Requirements:** The UAS operator must meet requirements listed in the Standard Site Operations Work Category. The UAS operator must obtain a Operational Waiver for 14 CFR § 107 to conduct the BVLOS flight and present the approved waiver to the OSC or RPM. The UAS operator must ensure that their vehicle is capable of self-egressing from the flight zone and is equipped with obstacle detection and avoidance sensors. BVLOS flights should not be conducted over persons not directly participating in the operation.

- **Emergency Operations**
    - **Definition:** The OSC has determined that site conditions constitute an emergency requiring immediate UAS flight authorization. Flights will be conducted to collect data at properties where EPA has obtained legal access to conduct site-related activities and/or where the OSC has authority for access in the conduct of an

emergency response action under the NCP pursuant to CERCLA as amended by SARA and the CWA as amended by OPA.

- **Requirements:** For flights lower than 400 feet AGL and in Class G airspace, not requiring a waiver or authorization, the UAS operator need only meet the requirements listed in the Standard Site Operations Work Category. For any flights requiring a waiver or authorization, an expedited approval must be obtained through the SGI process with FAA's SOSC prior to the flight. The EPA SGI Representative making the request will provide the approved waiver to the OSC.

- **Controlled or Restricted Airspace**
  - **Definition:** Site is located within proximity to a controlled or restricted airspace that requires an airspace authorization for UAS operations. An example of flights that would be conducted in a controlled or restricted airspace is a site located in, or near, an airport or helicopter pad.
  - **Requirements:** The UAS operator must meet requirements listed in the Standard Site Operations Work Category. The UAS operator will be tasked by EPA with requesting controlled Airspace Authorization from the FAA and present documentation of the approved authorization to the OSC or RPM.

PROCUREMENT OF UAS SERVICES

UAS services are funded by [select one: Superfund/OPA/Stafford Act/EPM] funds from Fiscal Year [add fiscal year; check OLEM UAS resources webpage to confirm congressional budgetary approval]. Procurement of UAS services will be conducted through the following resource(s) as described in the OLEM UAS Procedures: [Choose regional contracts OR federal agency. Spell out acronym for the contract(s) being used. Delete inapplicable contracts or bullets and also delete this directions sentence]

- **Regional contract(s)**: [select one or more then spell out acronym(s) and delete rest: START, ERRS, RAF, SERAS, REAC]
  Contracted Pilot In Command will provide documentation of a valid remote pilot certificate and meet the requirements of 14 CFR §107.65 to operate UAS at the Site. Only aircraft with a valid registration certificate pursuant to the requirements of 14 CFR §91.203(a)(2) or a current Section 44807 exemption, and which is registered to the contractor, will be allowed to operate at the Site.
- **[federal agency] operating on EPA's behalf under an interagency agreement (IA).**
  Pilot In Command and aircraft must provide a valid FAA Form 7711-1 UAS Certificate of Authorization (COA) which permits the type and location of the requested work. Alternatively, the pilot in command may provide documentation of a valid remote pilot certificate and meet the requirements of 14 CFR §107.65. Only aircraft with a valid registration certificate pursuant to the requirements of 14 CFR §91.203(a)(2) or a current Section 44807 exemption, and which is registered to the pilot's agency, will be allowed to operate at the Site.

UAS UTILIZATION REPORTING

Under the Agency UAS Policy, use of UAS must be reported annually to the EPA Chief Information Officer (CIO). To facilitate this reporting requirement, UAS use at the Site will be

reported in a digital form at the following OEM link: www.xxxxxxxxxxx. This report will be completed for each mission that is conducted.

Regional management shall, except in exigent circumstances, provide written notifications at least 3 working days in advance of any use of UAS to OLEM and the Office of Public Affairs.

APPROVED: _____ DATE: _____

Name, Director
Superfund and Emergency Management Division

cc: [regions to develop]